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The Commonwealth of Massachusetts
Executive Office of Labor
Department of Labor and Industries
Division of Occupational Hygiene
1001 Watertown Street
West Newton 02165

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Minimum Specifications For Asbestos Abatement Projects Eligible for Reimbursement Under -- Chapter 614 of the Acts of 1985

Introduction

The purpose of these specifications is to ensure that asbestos abatement operations reimbursed under Chapter 614 will be executed in a safe and effective manner. Awarding authorities should be advised that once the contractor leaves the job site there are currently no regulations protecting building owners. To ensure proper cleanup performance by the contractor, the awarding authority should provide the contractor with definitive job specifications for asbestos related work. In addition bonding is desirable to ensure appropriate compliance with the contract and completion within the scheduled time period. It is also recommended that complete payment for the contracted asbestos abatement work be withheld until the criterion of "no visible debris" and 0.01 fibers/cc (total fiber count) as measured at the final clearance air monitoring are achieved. Reimbursement under Chapter 614 is contingent on final approval by the Division of Occupational Hygiene and the Department of Education.

I. General Requirements

1. All asbestos abatement projects will have written job specifications.
2. Only those proposed asbestos abatement projects which conform to the specifications set forth herein shall be considered eligible for reimbursement under Chapter 614.
3. All proposed asbestos abatement projects shall be subject to inspection and approval of the Division of Occupational Hygiene prior to the commencement of the project. All proposed asbestos abatement projects which in the opinion of the Division will not result in the desired abatement of an asbestos hazard or are otherwise inadvisable, will not be eligible for reimbursement under Chapter 614.
4. For asbestos abatement projects which have been completed or are in progress prior to the issuance of these specifications, but are otherwise in conformance with these specifications, written documentation of conformance must be submitted to the Division of Occupational Hygiene before eligibility for reimbursement will be considered.

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5. Requests for exemptions or variances to these specifications for certain conditions (such as - abatements of small quantities of asbestos, spot repairs, or when the glovebag technique is used exclusively) must be submitted in writing prior to commencement of the work.
6. If alternative work practices, protective equipment, or standards have been used for asbestos abatement projects which have been completed or are in progress prior to the issuance of these specifications it must be demonstrated in writing that these work practices, equipment and/or standards provided a level of worker and area protection equivalent to or greater than the specifications set forth herein.

II. Awarding of Contracts

All statues regulating competitive bidding and construction contracts for public buildings and public works projects as set forth in Chapter 149 of the Massachusetts General Laws will be upheld.

III. Applicable Regulations

It is assumed that the asbestos abatement specifications and the work performed under those specifications will conform and comply with all the requirements of the following regulations:

1. USEPA Regulations for Asbestos, CFR, Title 40, Part 61, Subpart M National Emissions Standards for Hazardous Air Pollutants (NESHAPS)
2. USEPA Regulations for Asbestos, Asbestos Abatement Projects, CFR, Title 40, Part 763, Subpart G
3. US Department of Labor, Occupational Safety and Health Administration (OSHA) Asbestos Regulations, CFR, Title 29, Part 1910, Section 1001
4. Massachusetts Department of Environmental Quality Engineering Regulations 310 CMR 7.00

IV. Notifications:

1. Pursuant to NESHAPS requirements (40 CFR, Part 61, Subpart M) the contractor will provide appropriate written notification at least ten (10) days or twenty (20) days depending on the amount of asbestos to be abated prior to the start of the asbestos abatement activity to:

   Regional Asbestos Coordinator
   USEPA
   JFK Federal Building
   Boston, MA 02203

2. At least twenty (20) days prior to the start of the asbestos abatement activity the contractor shall provide appropriate written notification to:

The Massachusetts Department of Environmental
Quality Engineering
Division of Air and Hazardous Materials
(appropriate regional office)
or
Department of Environmental Quality Engineering
Office of Public Affairs
One Winter Street
Boston, MA 02108

3. At least ten (10) days prior to the start of the asbestos abatement activity the contractor shall provide appropriate written notification to:

   The Massachusetts Division of Occupational Hygiene
   1001 Watertown Street
   West Newton, MA 02165

4. Local Notification Requirements - as applicable.

V. Protective Clothing and Equipment

1. The contractor shall provide approved respirators (see Section VI Respiratory Protection) and protective clothing to all workers, and to all official representatives of the owner, state or other governmental entity, and the architect/engineer who may inspect the job site.
2. Full body disposable protective clothing, including head, body, and foot coverings consisting of material impenetrable by asbestos fibers (Tyvek^{R} or equivalent) shall be provided to all workers and authorized visitors.
3. Non-skid footwear shall be provided to all abatement workers. Disposable clothing shall be adequately sealed to the footwear to prevent body contamination.
4. All electrical cords and connections shall be fitted with ground fault interruptors.
5. Eye protection and hard hats shall be provided as appropriate.

VI. Respiratory Protection

1. All persons at the work site who are potentially exposed to asbestos (workers and visitors) shall be provided with MSHA or NIOSH-approved respirators.
2. The minimum respiratory protection will be the half-face, dual cannister air purifying respirator with HEPA filters.
3. The level of respiratory protection to be provided shall be determined, in part, through the use of a respirator program, which shall have been established in accordance with OSHA Asbestos Regulations 29 CFR 1910.134 and 29 CFR 1910.1001. The written particulars of said respirator program shall be available for inspection at the work site.
4. Where respirators with disposable filters are utilized, a stock of new filters shall be available for use at the job site. Filters shall be changed at least once in each 8-hour period or according to manufacturer specifications.
5. Respirators will be cleaned and maintained according to manufacturers instructions.

6. All respirators shall be properly fit tested. Bearded workers or visitors will wear full face powered air or hooded respirators.

VII. Security Program

1. The work site will be closed to the public. A security system must be established so that only authorized personnel can enter the asbestos job site.
2. The work area shall be placarded with asbestos hazard signs in accordance with OSHA Regulations 29 CFR, 1910.1001.
3. Emergency exits shall be maintained, or alternate exits provided, during the asbestos abatement operation.

VIII. Work Procedures and Practices

1. Before abatement operations are commenced all moveable objects will be removed from the work area. All objects shall be HEPA vacuumed or wet cleaned prior to their removal.
2. Isolation and containment of the work area shall be accomplished by completely sealing off all openings and fixtures, including but not limited to: ventilation ducts, doorways, corridors, windows, electrical conduits, and lights with 6-mil (minimum) plastic sheeting securely taped in place.
3. All building surfaces within the containment area shall be covered with 6-mil (minimum) plastic sheeting securely taped in place. All articles left inside the containment barrier must be completely sealed with plastic sheeting so as to prevent contamination.
4. A decontamination facility shall be contructed and used as the sole entry and egress to the work area for the duration of the removal operations. This facility should be integral with the work area and constructed with framing materials and plastic sheeting (6-mil; minimum) in such a manner as to create three separate compartments as described below. These compartments should be separated from each other by overlapping double-thickness plastic sheeting. The entire facility should be tightly constructed and sealed so as to prevent air leakage. The compartments beginning with the one closest to the work area are:

    a. Equipment and Access Area: This area is designated for equipment storage and access to the work space. Workers must remove all protective clothing, except for their respirators in this area. All surfaces shall be covered with polyethylene as described for the work space.
    b. Shower Room: Workers will remove respirators and shower in this area. Showers must have both hot and cold water.
    c. Clean Room: This area is to be kept free from asbestos contamination. All street clothes must be kept in the confines of this space. At the beginning of the work cycle, workers will change into clean protective clothing in this area. At the end of the work cycle, workers dress in this area after showering.

5. HEPA-filtered, powered exhaust units will be used to maintain a negative air pressure in the containment area throughout the work

operation. The number and capacity of such units will be sufficient to provide a minimum of four air changes per hour within the containment area. Each unit should be equipped with a Magnehelic guage or manometer and an audible alarm to indicate filter plugging or unit malfunctioning. Units will be operated in accordance with USEPA recommendations (As specified in Appendix J of USEPA Guidance Document EPA 560/5-85-024) Spare HEPA filters and prefilters will be available for use at the job site. Discarded filters will be disposed as asbestos waste. Units will run continuously during the removal operation (except during clearance air sampling). Discharge of the negative air pressure units will be to the outside of the building.

6. The handling, renovation and/or removal of asbestos must be confined to the containment area. Before asbestos material is handled it shall be sprayed with water amended with an appropriate surfactant. The material shall be sufficiently saturated to prevent excessive dispersal of asbestos fibers. Wetting shall be repeated as often as necessary to maintain the wet condition of the material. In no case shall removed asbestos material and debris be allowed to accumulate, but it shall be picked up and placed in appropriate containers on a continuing basis.
7. All asbestos and asbestos-contaminated waste material shall be double-bagged wet in polyethylene bags (6-mil minimum thickness) or placed in leak-tight drums. Bags and drums of asbestos waste are to be sealed, labelled, transported, and disposed of in accordance with all applicable OSHA and EPA regulations. At the conclusion of the job all polyethylene materials, tape, cleaning material, and clothing will be bagged and treated as asbestos waste.
8. All equipment shall be wet cleaned or HEPA vacuumed prior to removal from the containment area.
9. If, at any time, air monitoring (see Section XI, Air Monitoring) shows that areas outside the containment area have fiber concentrations in excess of 0.04 fiber/cc (or above pre abatement baseline readings - whichever is greater) affected areas must be contained, maintained, and cleaned in the same manner as the work space.

IX. Personal Hygiene

All workers without exception shall:

1. Remove street clothes in the clean room and put on disposable coveralls, footwear and respirators before entering the work area.
2. Refrain from eating, drinking, or smoking in the work area.
3. Remove disposable work clothes and footwear before exiting the work area. Still wearing respirators workers shall proceed to the showers. Respirators shall be removed while showering with soap and water. After showering workers shall enter the clean change area and don street clothes or new coveralls.
4. Leave disposable footwear inside the work area until the completion of the job. Such footwear will then be disposed as asbestos waste or thoroughly cleaned.

X. Cleanup and Area Clearance

1. Subsequent to the completion of all asbestos abatement work the work area shall be cleaned to a condition of no visible debris and a total airborne fiber concentration of 0.01 fibers/cc or less (as measured by the NIOSH Analytical Method # P and CAM 239 or NIOSH Analytical Method 7400).
2. Wet cleaning methods (sponging and mopping) shall be utilized to acheive a condition of "no visible debris" in the work area.
3. Sealed bags or drums of asbestos debris shall be wet-cleaned and removed through the decontamination facility.
4. HEPA vacuuming should be used to thoroughly clean dry surfaces.
5. After initial cleaning, the containment area should be inspected by an agency or individual knowledgeable and qualified in asbestos clearance testing procedures and who is not affiliated in any way with the contractor performing the abatement work. A finding of "no visible debris" constitutes a satisfactory finding. The area must be repeatedly recleaned until this finding is met.
6. Following visual inspection and when surfaces within the containment area are dry, post abatement (clearance) air monitoring shall be used to confirm that the containment area has been adequately cleaned. Using aggressive air sampling methods a sufficient number of air samples shall be collected so as to determine post abatement fiber concentrations within each containment area. There shall be a minimum of two clearance samples for each containment area (or no fewer than 2 clearance samples for each 10,000 square feet in a single contained area). The volume of air sampled shall be sufficiently large to permit a quantification limit of 0.01 fibers/cc or less (assuming a 10 fiber, 100 fields limit of reliable quantification, see USEPA Guidance Document 560/5-85-024, Appendix M).
7. The contractor shall not be released and the area declared clean until all post abatement air samples inside the containment are 0.01 fibers/cc of air or less as measured by the NIOSH Analytical Method # P and CAM 239 or NIOSH Analytical Method 7400. Until the condition is reached the containment area shall be repeatedly cleaned and sampled.

XI. Air Monitoring

1. Air monitoring shall be conducted by an individual or agency suitably equipped and with specialized experience in air sampling for asbestos. The air monitoring individual or agency shall not be hired by the contractor performing the abatement work.
2. Methods of air sampling and fiber counting will generally be as prescribed by the Standard NIOSH Analytical Method # P and CAM 239 or NIOSH Analytical Method 7400.
3. A sufficient number of air samples shall be collected so as to determine with reasonable accuracy the levels of exposure of workers (in accordance with OSHA 1910.1001) and the levels of building contamination in affected areas. These shall generally include:

A. Pre-abatement sampling - A sufficient number of air samples from outside the work area shall be collected prior to the start of abatement activities to determine existing airborne fiber levels under normal activity conditions. In lieu of pre abatement sampling outside the work area the contractor may elect to accept 0.04 fibers/cc as being the maximum pre-abatement background level.

B. Sampling during abatement - The following schedule of air samples shall be required once abatement activities begin.

Area Samples (outside containment) - At least two area samples from spaces outside of the work area containment shall be taken on a daily basis. One of these samples shall be taken at the entrance of the decontamination facility.

Personal Samples (inside containment) - The number and frequency of these shall be in accordance with the requirements of OSHA 1910.1001.

C. Post-abatement (clearance) - Once the "no visible debris" criterion has been met, a sufficient number of samples shall be collected (using agressive sampling) to determine post-abatement air concentrations. An adequate sample volume of air, so as to provide accuracy to 0.01 fibers/cc, shall be collected. (See Section X, Cleanup and Area Clearance).

4. All air monitoring results shall be maintained at the job site for inspection.

XII. Medical and Training Requirements

Medical monitoring (and recordkeeping) as required by OSHA regulations shall be provided to all workers. In addition the contractor shall maintain at the job site written documentation indicating that each employee has had instruction on the hazards of asbestos exposure, on the use and fitting of respirators and on all aspects of work procedures and protective measures involved in the abatement operation.